

# Lithium Chloride

sc-203110



The Power is Question

## Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Lithium Chloride

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
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### EMERGENCY

ChemWatch

Within the US & Canada: 877-715-9305

Outside the US & Canada: +800 2436 2255

(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

Cl-Li, LiCl, "lithium chloride, monohydrate (CAS RN: 16712-20-2)"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	0	
Toxicity:	2	
Body Contact:	2	
Reactivity:	0	
Chronic:	3	

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Harmful if swallowed.  
Limited evidence of a carcinogenic effect.  
Possible risk of impaired fertility.  
Possible risk of harm to the unborn child.  
Irritating to eyes and respiratory system.  
Harmful to aquatic organisms.

## POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

- Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
- Lithium, in large doses, can cause dizziness and weakness.  
If a low salt diet is in place, kidney damage can result.

#### EYE

- This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation.  
Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.

#### SKIN

- Open cuts, abraded or irritated skin should not be exposed to this material.
- Solution of material in moisture on the skin, or perspiration, may increase irritant effects.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.  
Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
- The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time.  
Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering.

#### INHALED

- The material can cause respiratory irritation in some persons.  
The body's response to such irritation can cause further lung damage.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

## CHRONIC HEALTH EFFECTS

- There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.  
Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.  
Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.  
Results in experiments suggest that this material may cause disorders in the development of the embryo or fetus, even when no signs of poisoning show in the mother.  
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.  
Lithium compounds can affect the nervous system and muscle. This can cause tremor, inco-ordination, spastic jerks and very brisk reflexes.  
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
lithium chloride	7447-41-8	99

## Section 4 - FIRST AID MEASURES

#### SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

#### EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

#### SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

#### INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

## NOTES TO PHYSICIAN

- Clinical effects of lithium intoxication appear to relate to duration of exposure as well as to level.
- Lithium produce a generalized slowing of the electroencephalogram; the anion gap may increase in severe cases.
- Emesis (or lavage if the patient is obtunded or convulsing) is indicated for ingestions exceeding 40 mg (Li)/Kg.

## Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Not applicable
Upper Explosive Limit (%):	Not applicable
Specific Gravity (water=1):	2.065
Lower Explosive Limit (%):	Not applicable

### EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.

### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Non combustible.
- Not considered to be a significant fire risk, however containers may burn.
- Decomposition may produce toxic fumes of: hydrogen chloride, metal oxides.
- May emit poisonous fumes.
- May emit corrosive fumes.

### FIRE INCOMPATIBILITY

- None known.

### PERSONAL PROTECTION

Glasses:

Safety Glasses.

Chemical goggles.

Gloves:

Respirator:

Particulate

## Section 6 - ACCIDENTAL RELEASE MEASURES

### MINOR SPILLS

- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal.

### MAJOR SPILLS

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

### RECOMMENDED STORAGE METHODS

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes

US - California Permissible Exposure Limits for Chemical Contaminants	lithium chloride (Particulates not otherwise regulated Respirable fraction)	5	(n)
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	lithium chloride (Particulates not otherwise regulated Respirable fraction)	5	
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	lithium chloride (Particulates not otherwise regulated (PNOR)(f)- Respirable fraction)	5	
US - Michigan Exposure Limits for Air Contaminants	lithium chloride (Particulates not otherwise regulated, Respirable dust)	5	
Canada - Prince Edward Island Occupational Exposure Limits	lithium chloride (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)	10	See Appendix B current TLV/BEI Book

ENDOELTABLE

## PERSONAL PROTECTION



## RESPIRATOR

Particulate

Consult your EHS staff for recommendations

## EYE

- Safety glasses with side shields.
- Chemical goggles.

## HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

## OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

## ENGINEERING CONTROLS

- Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Mixes with water.

State	Divided solid	Molecular Weight	42.39
Melting Range (°F)	1121	Viscosity	Not Applicable
Boiling Range (°F)	2417- 2480	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not applicable	pH (1% solution)	Not available
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not applicable	Vapour Pressure (mmHG)	Not applicable
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	2.065
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not applicable
Volatile Component (%vol)	Not applicable	Evaporation Rate	Not applicable

### APPEARANCE

White cubic crystals or powder; odourless. Sharp saline taste. Very soluble in water, alcohols, ether, pyridine and nitrobenzene.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

### STORAGE INCOMPATIBILITY

- Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
- These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
- The state of subdivision may affect the results.

Avoid strong acids.

Contact with permanganate or BrF<sub>3</sub> may evolve heat or toxic fumes.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

lithium chloride

### TOXICITY AND IRRITATION

LITHIUM CHLORIDE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (rat) LD50: 526 mg/kg	Skin (rabbit): 500 mg/24h
Oral (human) LDLo: 200 mg/kg/3d	Eye (rabbit): 100 mg/24h
Oral (human) TDLo: 243 mg/kg/13d	

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce

conjunctivitis.

The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

Neoplastic by RTECS criteria.

Ptosis, altered sleep times, tremor, muscle weakness, antipsychotic behaviour, nausea, vomiting, androgenicity, changes in spermatogenesis, Hodgkins lymphoma, abortion, foetal death, specific development abnormalities recorded.

## Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
lithium chloride	LOW		LOW	HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

‡ Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

For small quantities:

- Neutralize an aqueous solution of the material.
- Filter solids for disposal to approved land fill.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

## Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**lithium chloride (CAS: 7447-41-8,85144-11-2,16712-20-2) is found on the following regulatory lists;**

"Canada Domestic Substances List (DSL)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "OECD Representative List of High Production Volume (HPV) Chemicals", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US Toxic Substances Control Act (TSCA) - Inventory"

## Section 16 - OTHER INFORMATION

### Ingredients with multiple CAS Nos

Ingredient Name CAS lithium chloride 7447-41-8, 85144-11-2, 16712-20-2

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:  
[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use,

frequency of use and current or available engineering controls must be considered.

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